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A STUDY OF PEER AND REPORTING SENIOR
RATINGS IN A
MARINE CORPS RIFLE COMPANY

William Carl Blaha

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THESIS

A STUDY OF PEER AND REPORTING SENIOR
RATINGS IN A
MARINE CORPS RIFLE COMPANY

by

William Carl Blaha

December 1974

Thesis Advisor:

Richard S. Elster

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A Study of Peer and Reporting Senior Ratings
in a
Marine Corps Rifle Company

by

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Major, United States Marine Corps
B.S., United States Naval Academy, 1964

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Abstract

The validity of peer ratings as a supplemental measure to the Marine Corps' performance evaluation system has been examined and subjected to analysis by the multitrait-multirater method. In a Marine Corps rifle company, two supervisory levels rated subordinates, and the subordinates in turn rated one another. Results revealed neither convergent validity (agreement among the raters) nor discriminant validity (independence of the rating scales). Results did provide evidence of disagreement among the raters on the performance of those being rated. Thus, official use of peer ratings in a performance evaluation system is questionable; however, an unofficial use to gain viewpoints of different levels of an organization may have merit.

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Introduction

Procedures for the performance evaluation of all Marine officers and non-commissioned officers (NCO's) in the grade of Sergeant and above are outlined in Marine Corps Order 1610.7A. The order states "the fitness report is an evaluation of duties performed, represents a comprehensive portrayal of the professional qualifications, personal traits, and potential of the individual, and is vital in determining duty assignments and selection for promotion [p. 1]."

One problem persisting in evaluating officer and NCO performance is the status of those doing the evaluation relative to those being evaluated. In 1947, Williams and Leavitt conducted a study using as subjects officer candidates at the Marine Corps' Officer Candidate School. The results of their study indicated that peer evaluations provided more valid measures of those being evaluated than did superior evaluations, because the peers had more time to observe one another than their superior officers had, the peers knew one another in their real environment, and the peers reacted more realistically to one another's behavior (Williams and Leavitt, 1947). What these results mean is that peers observe one another behave in a working environment when superiors don't. The validity of peer evaluations as a predictor of the peers eventual success has been investigated in other military settings, too, (Hollander, 1954 & 1965; Kotula, 1966; Reynolds, 1966; Wherry and Fryer, 1949; Wollack and Guttman, 1961).

The military is not the only setting in which peer nomination studies have been conducted. Industry has examined peer nominations and their usefulness at managerial levels (Dent and Mann, 1954; Roadman, 1964; Weitz, 1958). Findings from industry showed that peers can identify certain characteristics among their fellow peer supervisors which differentiate those considered promotable by higher level management from those considered not promotable (Weitz, 1958). The educational field, too, has investigated peer nominations (Cassel and Martin, 1964; Smith, 1967). In all these studies, the period which elapsed from the time of the initial rating until the final performance level (criterion) was measured, varied from several months (Wherry and Fryer, 1949) up to 2 years (Hollander, 1965), and the validity coefficients reported typically ranged around .40, though some higher coefficients have also been found (Reynolds, 1966).

But the real value of peer evaluations may go beyond these findings in military, industrial, and educational settings. The Marine Corps is built on teamwork. To the extent that the output of the Marine Corps' teamwork is efficient, effective, and individually rewarding, the Marine Corps will accomplish its missions in such a way as to maximize job performance and job satisfaction. The fitness report, indeed, is a measure of the individual's performance in the Marine Corps, and it appears that the findings of military, industrial, and educational studies support the use of peer ratings in a performance evaluation system. The purpose of this study is to examine the use of peer evaluations as a

means of supplementing the current Marine Corps performance evaluation system.

Method

Subjects

The study was conducted in the 1st Marine Division, Camp Pendleton, California, during the summer of 1974. The population consisted of Marines in a randomly selected rifle company. Two supervisory levels of Reporting Seniors (RS's) each evaluated Squad Leaders under their command, and the Squad Leaders (P's) in turn provided peer evaluations of one another. A Peer Evaluation Form (PEF) developed by the investigator was used to conduct the evaluation. This form is shown in Appendix A.

The two supervisory levels consisted of one Company Commander (RS 2), a Captain in rank with seven years of service, including a recent combat tour, and four Platoon Commanders (RS 1's), who were Lieutenants with an average of 1.3 years of service.

The peers consisted of twelve Squad Leaders (P's), all of whom were Corporals with an average time in service of 2.8 years, an average time in grade of 4.2 months, and an average age of 22 years.

Materials

The RS's and the P's used an evaluation form in conducting their performance evaluations. Three rating scales in the present Marine Corps Fitness Report ("Regular Duties" (Scale 1, "General Value to the Service" (Scale 2), and "Requirements in War" (Scale 3)) were selected as the evaluation

scales. The rating levels of each of these scales was used as in the present Marine Corps Fitness Report (Outstanding, Excellent, Above Average, Average, Below Average, Unsatisfactory, and Not Observed). In order to standardize the scales and the rating levels among the RS's and P's, instructions defining the scales and the rating levels were provided on the evaluation form. Appendix A is a sample of the form.

Procedure

Before gathering both the RS's and the P's evaluations, the investigator met with all subjects to review the instructions contained on the evaluation form. The subjects then completed their evaluations. Each subject, upon completion of his evaluations, independently placed them in a collection box provided. After the last subject had completed his evaluations, the investigator gathered all forms from the collection box.

To derive total RS and P scores on the evaluation form, numbers were assigned to the rating scale levels. The highest rating, Outstanding (OS), was awarded a plus 5, the next highest, Excellent (EX), was awarded a plus 4, and so on through the rating level Unsatisfactory (UN), which was awarded a 0. The rating Not Observed was recorded as "NO." A sum for each P was then obtained by adding the numerical ratings given him by all other P's, yielding a positive one or two digit score that reflected the total score of the P being evaluated. Figure I is an example showing how such a score was calculated.

Figure I

Example of Calculation of the Total Score
for a Peer

Rating Levels
(points awarded in parentheses)

		NO ("NO")	UN (0)	BA (1)	AV (2)	AA (3)	EX (4)	OS (5)
Rating Scales	1					X		
	2				X			
	3	X						

Total Score for the Peer = 3 + 2 + "NO" = 5.

Figure I shows how the ratings were summarized when one peer had been rated by one rater (a peer, a RS 1 or RS 2). As a next step, all of the ratings of a peer by a level of raters (peer, RS 1, or RS 2) were summarized. Figure II displays how this summarization was conducted.

Figure II

Example of Rating Summarization Procedure
for the Peers and Computed Average Ratings

Scale 1

	Raters ^a											Ratee Total	Average Ratee Rating	
	1	2	3	4	5	6	8	9	10	11	12			
Ratees	1		3	3	2	2	2	2	2	NO	4	2	22	2.44
	2	2		3	2	2	2	1	4	NO	3	NO	19	2.38
	3	2	3		2	2	2	3	2	4	2	NO	22	2.44
	4	2	NO	2		1	2	NO	NO	3	NO	NO	10	2.00
	5	2	2	3	2		3	3	4	3	4	2	28	2.80
	6	2	2	2	2	0		3	NO	4	NO	NO	15	2.14
	7	1	1	2	2	0	2	1	NO	NO	NO	0	9	1.13
	8	2	1	3	3	2	2		3	5	2	0	23	2.30
	9	1	1	3	NO	NO	NO	2		3	4	0	14	2.00
	10	2	NO	3	3	2	2	NO	NO		4	2	18	2.57
	11	1	2	3	NO	0	NO	2	3	4		2	17	2.13
	12	2	NO	3	NO	NO	NO	NO	NO	3	2		10	2.50
Rater Total	19	15	30	18	11	17	17	18	29	25	8			
Average Rater Ratings	1.73	1.88	2.73	2.25	1.22	2.13	2.13	3.00	3.63	3.13	1.14			

a. In actual data collection, one rater was absent. He, therefore, did not rate. However, he was rated by all others, and, thus, he was counted among the Ratees.

Because some ratees were marked "NO" by some raters, the total rating scores possible varied among ratees. To eliminate this artifact, average ratings were computed and

used in the later statistical analyses. This method for computing average ratings was also used with the ratings from the RS 1's. As there was only one RS 2, no computation of an average was necessary.

The computations as illustrated in Figure II were also used to examine differences among raters. It was considered likely that some raters would be more "lenient" than others and would tend to give higher ratings. Figure II demonstrates this likelihood in the ranges of average ratings. Such rater differences could have had an unwanted influence on the data, because some raters had marked some ratees "NO." If, for instance, a ratee had been marked "NO" by all of the relatively lenient raters, he would have suffered a comparative disadvantage when his ratings were compared with the ratings of other ratees. To overcome these difficulties, the ratings for each of the raters in the P and RS 1 sets were standardized to a mean of zero and a standard deviation of one for each scale and rater separately. Figure III shows how this standardization was conducted.

The intercorrelations among the ratings given by the peers were computed using the raters' standardized ratings. Intercorrelations among P and RS 1 ratings of P's used the average ratings assigned to a P. Figure IV illustrates how these correlations were computed. The average P ratings were also used to compute the P and RS 2 correlations. Appendix B contains the average ratings used to compute all correlations in the present study.

Figure III

Example of Rating Standardization Procedure
for the Peers

(Data in Table 1 are standardized ratings)

Scale 1

	Raters ^a											Ratee Average
	1	2	3	4	5	6	8	9	10	11	12	
1		1.44	0.61	-0.57	0.84	-0.37	-0.16	-1.22	NO ^b	0.94	0.86	0.26
2	0.61		0.61	-0.57	0.84	-0.37	-1.44	1.22	NO	-0.13	NO	0.09
3	0.61	1.44		-0.57	0.84	-0.37	1.12	-1.22	0.53	-1.21	NO	0.13
4	0.61	NO	-1.63		-0.24	-0.37	NO	NO	-0.89	NO	NO	-0.50
5	0.61	0.16	0.61	-0.57		2.64	1.12	1.22	-0.89	0.94	0.86	0.67
6	0.61	0.16	-1.63	-0.57	-1.33		1.12	NO	0.53	NO	NO	-0.15
7	-1.63	-1.12	-1.63	-0.57	-1.33	-0.37	-1.44	NO	NO	NO	-1.15	-1.15
8	0.61	-1.12	0.61	1.73	0.84	-0.37		0	1.97	-1.21	-1.15	0.19
9	-1.63	-1.12	0.61	NO	NO	NO	-0.16		-0.89	0.94	-1.15	-0.48
10	0.61	NO	0.61	1.73	0.84	-0.37	NO	NO		0.94	0.86	0.74
11	-1.63	0.16	0.61	NO	-1.33	NO	-0.16	0	0.53		0.86	-0.12
12	0.61	NO	0.61	NO	NO	NO	NO	NO	-0.89	-1.21		-0.22
Rater Avg	0	0	0	0	0	0	0	0	0	0	0	

a. In the conduct of data collection, one rater was absent. For purposes of rating, he did not rate but he was rated by all others. Thus, he was counted among the Ratees.

b. NO means "not observed."

Figure IV

Example of Intercorrelation Computation
for Peers and Reporting Senior 1

(Data in Table are standardized ratings)

Scale 1

		Average Rating of P by other P's	Average Rating of P by RS 1's
Ratees	1	0.26	0.73
	2	0.09	0.70
	3	0.13	-0.82
	4	-0.50	0.35
	5	0.67	0.52
	6	-0.15	-0.17
	7	-1.15	0.70
	8	0.19	0.01
	9	-0.48	0.66
	10	0.74	-1.07
	11	-0.12	-2.02
	12	-0.22	-1.41

$$r = -0.20$$

Analysis of the intercorrelations was made using the multitrait-multirater technique (Campbell and Fiske, 1959; Lawler, 1967). The matrix of intercorrelations was analyzed in terms of convergent and discriminant validity, as these validities furnish evidence of the construct validity of the scales. Convergent validity reflects agreement among raters in evaluating dimensions of behavior. This validity is demonstrated by correlations between the same dimensions, as rated by different raters, being significantly different

from zero. Discriminant validity reflects the independence of the performance dimensions. Campbell and Fiske (1959) suggest three criteria for demonstrating discriminant validity:

1. Discriminant validity exists if the correlation between raters for a dimension is higher than the correlation between that dimension and any other dimension which has neither dimension nor rater in common.

2. Discriminant validity exists when a dimension correlates more highly with an independent effort to measure the same dimension than with measures designed to assess different dimensions which employ the same rater.

3. Discriminant validity exists when the same patterns of dimension intercorrelations exist for all common and different rater combinations.

Thus, the study assessed the convergent validity among the raters (RS's and P's) when using the same scales and the discriminant validity of the three performance dimensions (Scale 1, Scale 2, Scale 3).

To determine the reliability of the raters' ratings, an averaging procedure was used. Guilford states (1965) that intracorrelations among raters are an indication of the reliability of ratings. If ratings had not been missing in the sets of ratings from the P's and RS 1's, intraclass correlations could have been easily computed and used as estimates of inter-rater agreement. Because of the missing observations, however, the actual correlations among all of the pairs of peer ratings were computed. The inter-rater correlations were also computed for the pairs of RS 1's.

To compute the average interpeer correlation, the inter-peer correlations were transformed using Fishers z's and weighted by their degrees of freedom (McNemar, 1962, p. 139 & 140). To estimate the reliability of the average ratings (averaged over raters) of the peers, the Spearman-Brown equation (McNemar, 1962, p. 208) was used with the average interpeer correlation. This process was repeated for each of the three scales and for the P's and RS 1's. The estimates of the reliabilities of the average ratings appear on the reliability diagonal of the multitrait-multirater matrix.

Results

The multitrait-multirater matrix is shown in Table 1. The convergent validity diagonal (correlation coefficients in parentheses) provided evidence that P's, RS 1's, and RS 2 were not in agreement in rating P's on the three scales. Agreement was substantial between P's and RS 1's on only one scale, Scale 2.

With respect to discriminant validity, none of the criteria specified by Campbell and Fiske (1959) were met by the present data. With the exception of one case, all of the correlations in the monorater (solid line) triangles were high and significant. The exception was among the P's on Scale 1 and 3.

Since neither convergent nor discriminant validity were established in the present study, there is doubt as to the construct validity of the performance dimensions, and as to inter-rater agreement.

TABLE 1

RELIABILITIES, INTERCORRELATIONS BETWEEN PEERS, REPORTING SENIORS FIRST LEVEL, AND REPORTING SENIOR SECOND LEVEL ON THREE SCALES ^a, ^b, ^c

Raters		P			RS 1			RS 2		
Raters	Scales	1	2	3	1	2	3	1	2	3
P	1	.72								
	2	.66	.10							
	3	.06	.60	.43						
RS 1	1	(-.20)	-.18	-.01	.92					
	2	.17	(.22)	.26	.98	.94				
	3	-.18	-.10	(-.04)	.79	.81	.84			
RS 2	1	(-.11)	-.11	.20	(-.06)	-.06	-.16			
	2	-.47	(-.47)	-.01	-.10	(-.10)	-.16	1.00		
	3	-.44	-.44	(-.07)	.13	.13	(-.01)	.56	.56	

- Convergent validity (monoscale-heterorater) coefficients are in parentheses, e.g., $(-.20)$.
- Reliabilities for the averaged (over raters) ratings appear as unadorned correlation coefficients, e.g., .72.
- Solid- and dashed-line triangles contain the discriminant validity (heteroscale-heterorater) coefficients. Solid-line triangles indicate monorater source, and dashed-line triangles indicate heterorater source.

The reliability diagonal (unadorned correlation coefficients outside the monorater triangles) showed high reliabilities for RS 1's, reflecting at least their agreement with one another, and showed low reliabilities for P's, reflecting disagreement among their ratings.

The validity coefficients involving the P's and RS 1's represent the correlations between the average P ratings provided by those rater sets.

Discussion

Interrater reliabilities, shown along the reliability diagonal of the multitrait-multirater matrix, ranged from .10 to .94. Those for the RS 1 rater set were the highest. These reliabilities averaged around .41 for the P rater set, but varied from .72 for Scale 1 to .10 for Scale 2. The RS 1 rater set had interrater agreements ranging from .84 to .94.

The convergent validities, shown along the validity diagonal, were usually negative, indicating not only no agreement, but also disagreement among the different rating sources. The one exception to this fact was the .22 correlation between P and RS 1 on Scale 2. These validities ranged from -.47 to .22.

The discriminant validities in the monorater triangles (solid line) were positive. They ranged from .06 to 1.00. Those for the P rater set were the lowest, their average being around .44, and those for the RS 1 rater set were the highest, with an average of .86. The fact that these validities were high in the RS 1 set and relatively high in the RS 2 set

probably is evidence of the halo effect in these two rating sources.

The discriminant validities in the heterorater triangles (dashed-line) were usually negative. These validities ranged from $-.47$ to $.26$ and averaged around $-.08$.

The heteroscale-heterorater correlations involving the RS 2 and the P's were fairly large in magnitude and negative, but not statistically significant, e.g., $-.44$, $-.44$, and $-.47$.

The major purpose of the present study was to examine peer evaluations in terms of convergent and discriminant validity. The results revealed interesting problems pertaining to both the raters and the rating scales.

The multitrait-multirater analysis provided no evidence for convergent validity. With the exception of the $.22$ correlation coefficient, all convergent validity coefficients were negative rather than positive. These results pointed out that there existed three widely different viewpoints among the raters as to performance of the P's. The results of the present study, then, did not coincide with those of Hollander (1965), which presented evidence for validity and agreement with a $.40$ correlation between the initial peer ratings and the final performance criterion of ratings given the peers by their superiors two years later. It should be noted that in this study all ratings were gathered at the same time in contrast to Hollander's study (1965).

With regard to the status of those during the evaluation relative to those being evaluated and the resulting different viewpoints, two explanations are necessary.

First, the two RS levels were not equivalent to each other in their opportunity to evaluate the P's. RS 1's had direct daily contact with at least three P's and supervised them closely. In some cases, a RS 1 may have had this close daily contact with the other nine P's. In the present study, then, each RS 1 was at least able to observe closely and evaluate three P's plus some or all of the other nine P's. The RS 2, on the other hand, was farther removed from the P's, being involved in administrative functions and direct supervision of the RS 1's. Thus the RS 2 had less opportunity to observe closely and evaluate the P's. As a result of this difference in opportunity to evaluate, different perspectives between the RS 1's and the RS 2 may have caused them to expect, observe, or value different behaviors, and the lack of convergent validity would not, therefore, be surprising.

Second, the P's were in a position to observe one another closely and so were relatively equivalent in their opportunity to evaluate one another. The P's had frequent and close contact with one another. Their routines were practically the same. Thus, as Leavitt and Williams pointed out (1947), the P's should be able to provide valid measures of one another's performance. The reliability diagonal of the P's, however, did not support their ability to rate in agreement with one another. Apparently, different perspectives among themselves

and different perspectives from those of the RS's led the P's to expect or value different behaviors. If this interpretation is true, the negative convergent validity of the P's with the RS's is not surprising.

The one exception to the foregoing explanation occurred between P's and RS 1's on Scale 2. Although the .22 correlation was positive and tended to show interrater agreement, it is not statistically significant ($p > .05$).

The multitrait-multirater analysis also showed limited evidence for discriminant validity. This fact suggested that there was dependency between the scales. The results manifested this dependency in that almost all correlations in the monorater (solid line) triangles were high. These results highlighted the presence of within-rater source halo.

The rating scales themselves provided the dimensions on which the raters were to evaluate the ratees. However, the scales were likely perceived differently and the ratings influenced by different rater values when used by the raters. The investigator had attempted to minimize the occurrence of this source of variance in the experimental design of the present study by meeting with all subjects to review the instructions contained on the evaluation form.

Given, then, the lack of convergent and the limited discriminant validity, the results provided little to no evidence of construct validity of the rating scales.

On a positive note, the results furnished evidence of two noteworthy points. First, the lack of convergent validity,

insofar as the P's were concerned, indicated that P's had points of view different from those of their RS's. This may support Williams and Leavitt's thesis (1947) which pointed out that peer evaluations are more valid than those given by the peers' superior officers. As to which group, P's or RS's, had the "true facts," no one will ever know, but at least the P's viewpoints deserve consideration. There is a distracting fact here, however, as the interrater agreement among the P's was low. Second, the high agreement among RS 1's, as evidenced by their reliability diagonal, provided evidence that they may be in a better position to rate ratees than the RS 2. This interpretation supports Williams and Leavitt (1947), who pointed out that when there are two groups in a position to evaluate a third group, the evaluation group having the closer association with the third group would be expected to provide the more valid evaluations.

Finally, two implications can be made from the results and discussion heretofore presented. First, with regard to the lack of convergent validity, P's, RS 1's, and the RS 2 would not totally agree with one another as to whom to promote and whom to select. In a task oriented organization like the Marine Corps, this disagreement can potentially lead to indecision, wavering, and improper personnel action, all of which would detract from effective job performance and efficient organizational operation. Second, in connection with the high agreement among RS 1's, even though there was disagreement between them and the P's and the RS 2, RS 1's appear

to be in the better position to evaluate officially subordinates than does the RS 2. This implication does not fit in with the Marine Corps' evaluation system at the company level, where the RS 2 performs the official evaluation. The RS 2 does consider recommendations from RS 1's, but he has the ultimate decision on the evaluation as presently done. Under the existing performance evaluation system in the Marine Corps this imperfection can lead to a misrepresentation of facts and erroneous personnel appraisal both of which would detract from effective personnel administration and organizational operations.

Conclusions

From the results of the present study, the investigator concludes that peer evaluations should not be used to supplement the current Marine Corps performance evaluation system. The sample of Marines used furnished convincing evidence that peer evaluations were not reliable, the average interrater agreement coefficient reported earlier being .41. Considering this fact, there is no sound basis then to use peer evaluations in an official sense. Unofficially, however, peer evaluations could serve as a management tool to gain insight into viewpoints of the varying levels with an organization, as the study showed different points of view between the P's and RS's.

A second conclusion is that, within the present organizational set up for performance evaluation at the company level, the supervisor closest to the individual being evaluated should be responsible for preparing the official evaluation

on the individual. The platoon commanders (RS 1's) then should write the fitness reports on squad leaders (P's) rather than the company commander (RS 2). In connection with this conclusion, considerable training will be necessary to acquaint potential platoon commanders with performance evaluation.

A final conclusion is that the behavioral dimensions (the scales) on the current fitness report should be closely examined in terms of present job descriptions to ensure that they (the scales) do in fact capture behavioral traits deemed essential to job performance. This need was demonstrated by the whole pattern of findings.

Appendix A

Peer Evaluation

Introduction

You have been together with your fellow Squad Leaders for some time now. From this contact, you have formed certain impressions regarding their present and future successes as Marines.

Considering these impressions, and carefully weighing the qualities of being a successful Marine, you are to evaluate your fellow Squad Leaders on the following dimensions:

Regular Duties

General Value to the Service

Requirements in Time of War

Forms have been provided for the evaluation.

THE RESULTS OF YOUR EVALUATION ARE TO BE USED FOR RESEARCH PURPOSES ONLY, AND WILL NOT AFFECT YOUR OR YOUR FELLOW MARINES' CAREERS.

Peer Evaluation

Part I: Specific Instructions

In evaluating your fellow Squad Leaders, you are to perform the following steps:

1. Consult the Squad Leader Roster which has been provided you, and draw a line through your name.
2. Evaluate each of the remaining names on your list using one Peer Evaluation Form per name. In this evaluation,

a. enter only the name of the individual you are evaluating in the space provided for on the Form, and

b. evaluate this individual only on the following dimensions (a brief definition follows each dimension):

(1) Regular Duties - all the jobs which the individual must perform everyday in order to have his unit motivated, squared away, and ready to go, to include handling of troops in the field and in garrison carrying out with energy and resolution that which is believed to be reasonable, right, or duty, and caring for troops.

(2) General Value to the Service - your estimate of how the Marine compares with all other Marines of the same grade, taking into account such factors as the capacity to handle jobs of increasing responsibility and preference for having the Marine in your unit.

(3) Requirements in Time of War - if your unit were in a combat environment, to what degree would you want the Marine to be a member of your unit.

c. In marking each dimension, the abbreviations shown in the marking boxes on the Form stand for the following:

NO Not Observed (Insufficient opportunity to evaluate).

UN Unsatisfactory (Unacceptable performance).

BA Below Average (Below the generally accepted standard).

AV Average (At the generally accepted standard).

AA Above Average (Above the generally accepted standard).

EX Excellent (To the degree seldom achieved by others of the same grade).

OS Outstanding (One of the clearly superior individuals of his grade).

Peer Evaluation Form

Part I

Name of the individual you are evaluating:

Last Initials

Dimensions:

Regular Duties

General Value to the Service

Requirements in Time of War (Circle the best phrase that applies)

NO	UN	BA	AB	AA	EX	OS

Not	Prefer	Be	Be	Particularly
Observed	Not	Willing	Glad	Desire
	To	To	To	To
	Have	Have	Have	Have

Appendix B

Average Ratings Used to Compute Correlations

Table 1

Intracorrelation for Peers on Scales 1 and 2

		Average Rating of P by Other P's on Scale 1	Average Rating of P by Other P's on Scale 2
Ratees	1	.26	.74
	2	.09	.14
	3	.13	.01
	4	- .50	-.20
	5	.67	-.17
	6	- .15	-.05
	7	-1.15	-.66
	8	.19	.22
	9	- .48	-.27
	10	.74	.32
	11	- .12	-.23
	12	- .22	-.63

$$r = .66$$

Table 2
Intracorrelation for Peers on Scales 1 and 3

		Average Rating of P by Other P's on Scale 1	Average Rating of P by Other P's on Scale 3
Ratees	1	.26	.54
	2	.09	.16
	3	.13	-.18
	4	-.50	.06
	5	.67	-.96
	6	-.15	-.15
	7	-1.15	-.24
	8	.19	.12
	9	-.48	-.15
	10	.74	.37
	11	-.12	.37
	12	-.22	-.36

$$r = .06$$

Table 3

Intracorrelation for Peers on Scales 2 and 3

		Average Rating of P by Other P's on Scale 2	Average Rating of P by Other P's on Scale 3
Ratees	1	.74	.54
	2	.14	.16
	3	.01	-.18
	4	-.20	.06
	5	-.17	-.96
	6	-.05	-.15
	7	-.66	-.24
	8	.22	.12
	9	-.27	-.15
	10	.32	.37
	11	-.23	.37
	12	-.63	-.36

$$r = .60$$

Table 4

Intercorrelation for Peers and Reporting Senior 1
on Scale 1

		Average Rating of P by Other P's on Scale 1	Average Rating of P by RS 1's on Scale 1
Ratees	1	.26	.73
	2	.09	.70
	3	.13	- .82
	4	- .50	.35
	5	.67	.52
	6	- .15	- .17
	7	-1.15	.70
	8	.19	.01
	9	- .48	.66
	10	.74	-1.07
	11	- .12	-2.02
	12	- .22	-1.41

$$r = -.20$$

Table 5

Intercorrelation for Peers on Scale 1 and
Reporting Senior 1 on Scale 2

		Average Rating of P by Other P's on Scale 1	Average Rating of P by RS 1 on Scale 2
Ratees	1	.26	.81
	2	.09	.75
	3	.13	- .84
	4	- .50	.38
	5	.67	.56
	6	- .15	- .27
	7	-1.15	.75
	8	.19	.08
	9	- .48	.69
	10	.74	-1.09
	11	- .12	-1.72
	12	- .22	-1.86

$$r = .17$$

Table 6
 Intercorrelation for Peers on Scale 1 and
 Reporting Senior 1 on Scale 3

		Average Rating of P by Other P's on Scale 1	Average Rating of P by RS 1's on Scale 3
Ratees	1	.26	1.18
	2	.09	.78
	3	.13	-1.02
	4	- .50	.30
	5	.67	.78
	6	- .15	- .90
	7	-1.15	.38
	8	.19	- .28
	9	- .48	- .45
	10	.74	-1.02
	11	- .12	- .90
	12	- .22	- .90

$$r = -.18$$

Table 7

Intercorrelation for Peers on Scale 2 and
Reporting Senior 1 on Scale 1

		Average Rating of P by Other P's on Scale 2	Average Rating of P by RS 1's on Scale 1
Ratees	1	.74	.73
	2	.14	.70
	3	.01	- .82
	4	-.20	.35
	5	-.17	.52
	6	-.05	- .17
	7	-.66	.70
	8	.22	.01
	9	-.27	.66
	10	.32	-1.07
	11	-.23	-2.02
	12	-.63	-1.41

$$r = -.18$$

Table 8
Intercorrelation for Peers on Scale 2 and
Reporting Senior 1 on Scale 2

		Average Rating of P by Other P's on Scale 2	Average Rating of P by RS 1's on Scale 2
Ratees	1	.74	.81
	2	.14	.75
	3	.01	- .84
	4	-.20	.38
	5	-.17	.56
	6	-.05	- .27
	7	-.66	.75
	8	.22	.08
	9	-.27	.69
	10	.32	-1.09
	11	-.23	-1.72
	12	-.63	-1.86

$$r = .22$$

Table 9
 Interrelation for Peers on Scale 2 and
 Reporting Senior 1 on Scale 3

		Average Rating of P by Other P's on Scale 2	Average Rating of P by RS 1's on Scale 3
Ratees	1	.74	1.18
	2	.14	.78
	3	.01	-1.02
	4	-.20	.30
	5	-.17	.78
	6	-.05	- .90
	7	-.66	.38
	8	.22	- .28
	9	-.27	- .45
	10	.32	-1.02
	11	-.23	- .90
	12	-.63	- .90

$$r = -.10$$

Table 10
 Intercorrelation for Peers on Scale 3 and
 Reporting Senior 1 on Scale 1

		Average Rating of P by Other P's on Scale 3	Average Rating of P by RS 1's on Scale 1
Ratees	1	.54	.73
	2	.16	.70
	3	-.18	-.82
	4	.06	.35
	5	-.96	.52
	6	-.15	-.17
	7	-.24	.70
	8	.12	.01
	9	-.15	.66
	10	.37	-1.07
	11	.37	-2.02
	12	-.36	-1.41

$r = -.01$

Table 11

Intercorrelation for Peers on Scale 3 and
Reporting Senior 1 on Scale 2

	Average Rating of P by Other P's on Scale 3	Average Rating of P by RS 1's on Scale 2
1	.54	.81
2	.16	.75
3	-.18	-.84
4	.06	.38
5	-.96	.56
6	-.15	-.27
7	-.24	.75
8	.12	.08
9	-.15	.69
10	.37	-1.09
11	.37	-1.72
12	-.36	-1.86

$r = .26$

Table 12
 Intercorrelation for Peers on Scale 3 and
 Reporting Senior 1 on Scale 3

		Average Rating of P by Other P's on Scale 3	Average Rating of P by RS 1's on Scale 3
Ratee	1	.54	1.18
	2	.16	.78
	3	-.18	-1.02
	4	.06	.30
	5	-.96	.78
	6	-.15	-.90
	7	-.24	.38
	8	.12	-.28
	9	-.15	.45
	10	.37	-1.02
	11	.37	-.90
	12	-.36	-.90

$$r = -.04$$

Table 13

Intracorrelation for Reporting Senior 1's
on Scales 1 & 2

		Average Rating of P by RS 1's on Scale 1	Average Rating of P by RS 1's on Scale 2
Ratee	1	.73	.81
	2	.70	.75
	3	- .82	- .84
	4	.35	.38
	5	.52	.56
	6	- .17	- .27
	7	.70	.75
	8	.01	.08
	9	.66	.69
	10	-1.07	-1.09
	11	-2.02	-1.72
	12	-1.41	-1.86

$$r = .98$$

Table 14
Intracorrelation for Reporting Senior 1's
on Scales 1 & 3

		Average Rating of P by RS 1's on Scale 1	Average Rating of P by RS 1's on Scale 3
Ratee	1	.73	1.18
	2	.70	.78
	3	- .82	-1.02
	4	.35	.30
	5	.52	.78
	6	- .17	- .90
	7	.70	.38
	8	.01	- .28
	9	.66	.45
	10	-1.07	-1.02
	11	-2.02	- .90
	12	-1.41	- .90

$$r = .79$$

Table 15

Intracorrelation for Reporting Senior 1's
on Scales 2 & 3

		Average Rating of P by RS 1's on Scale 2	Average Rating of P by RS 1's on Scale 3
Ratee	1	.81	1.18
	2	.75	.78
	3	- .84	-1.02
	4	.38	.30
	5	.56	.78
	6	- .27	- .90
	7	.75	.38
	8	.08	- .28
	9	.69	.45
	10	-1.09	-1.02
	11	-1.72	- .90
	12	-1.86	- .90

$$r = .81$$

Table 16

Intercorrelation for Peers on Scale 1
and Reporting Senior 2 on Scale 1

		Average Rating of P by Other P's on Scale 1	Rating of P by RS 2 on Scale 1
Ratee	1	.26	.20
	2	.09	-1.04
	3	.13	-1.04
	4	- .50	-1.04
	5	.67	1.45
	6	- .15	-1.04
	7	-1.15	1.45
	8	.19	-1.04
	9	.48	.20
	10	- .74	.20
	11	- .12	.20
	12	- .22	1.45

$$r = -.11$$

Table 17

Intercorrelation for Peers on Scale 1
and Reporting Senior 2 on Scale 2

		Average Rating of P by Other P's on Scale 1	Rating of P by RS 2 on Scale 2
Ratee	1	.26	.20
	2	.09	-1.04
	3	.13	-1.04
	4	- .50	-1.04
	5	.67	1.45
	6	- .15	-1.04
	7	-1.15	1.45
	8	.19	-1.04
	9	.48	.20
	10	- .74	.20
	11	- .12	.20
	12	- .22	1.45

$$r = -.47$$

Table 18

Intercorrelation for Peers on Scale 1
and Reporting Senior 2 on Scale 3

		Average Rating of P by Other P's on Scale 1	Rating of P by RS 2 on Scale 3
Ratee	1	.26	.53
	2	.09	.53
	3	.13	.53
	4	- .50	-2.67
	5	.67	.53
	6	- .15	-1.06
	7	-1.15	.53
	8	.19	-1.06
	9	.48	.53
	10	- .74	.53
	11	- .12	.53
	12	- .22	.53

$$r = -.44$$

Table 19

Intercorrelation for Peers on Scale 2
and Reporting Senior 2 on Scale 1

		Average Rating of P by Other P's on Scale 2	Rating of P by RS 2 on Scale 1
Ratee	1	.74	.20
	2	.14	-1.04
	3	.01	-1.04
	4	- .20	-1.04
	5	- .17	1.45
	6	- .05	-1.04
	7	- .66	1.45
	8	.22	-1.04
	9	- .27	.20
	10	.32	.20
	11	- .23	.20
	12	- .63	1.45

$$r = -.11$$

Table 20

Intercorrelation for Peers on Scale 2
and Reporting Senior 2 on Scale 2

		Average Rating of P by Other P's on Scale 2	Rating of P by RS 2 on Scale 2
Ratee	1	.74	.20
	2	.14	-1.04
	3	.01	-1.04
	4	- .20	-1.04
	5	- .17	1.45
	6	- .05	-1.04
	7	- .66	1.45
	8	.22	-1.04
	9	- .27	.20
	10	.32	.20
	11	- .23	.20
	12	- .63	1.45

$$r = -.47$$

Table 21

Intercorrelation for Peers on Scale 2
and Reporting Senior 2 on Scale 3

		Average Rating of P by Other P's on Scale 2	Rating of P by RS 2 on Scale 3
Ratees	1	.74	.53
	2	.14	.53
	3	.01	.53
	4	-.20	-2.67
	5	-.17	.53
	6	-.05	-1.06
	7	-.66	.53
	8	.22	-1.06
	9	-.27	.53
	10	.32	.53
	11	-.23	.53
	12	-.63	.53

$$r = -.44$$

Table 22

Intercorrelation for Peers on Scale 3
and Reporting Senior 2 on Scale 1

		Average Rating of P by Other P's on Scale 3	Rating of P by RS 2 on Scale 1
Ratee	1	.54	.20
	2	.16	-1.04
	3	-.18	-1.04
	4	.06	-1.04
	5	-.96	1.45
	6	-.15	-1.04
	7	-.24	1.45
	8	.12	-1.04
	9	-.15	.20
	10	.37	.20
	11	.37	.20
	12	-.36	1.45

$$r = .20$$

Table 23

Intercorrelation for Peers on Scale 3
and Reporting Senior 2 on Scale 2

		Average Rating of P by Other P's on Scale 3	Rating of P by RS 2 on Scale 2
Ratee	1	.54	.20
	2	.16	-1.04
	3	-.18	-1.04
	4	.06	-1.04
	5	-.96	1.45
	6	-.15	-1.04
	7	-.24	1.45
	8	.12	-1.04
	9	-.15	.20
	10	.37	.20
	11	.37	.20
	12	-.36	1.45

$$r = -.01$$

Table 24

Intercorrelation for Peers on Scale 3
and Reporting Senior 2 on Scale 3

		Average Rating of P by Other P's on Scale 3	Rating of P by RS 2 on Scale 3
Ratee	1	.54	.53
	2	.16	.53
	3	-.18	.53
	4	.06	-2.67
	5	-.96	.53
	6	-.15	-1.06
	7	-.24	.53
	8	.12	-1.06
	9	-.15	.53
	10	.37	.53
	11	.37	.53
	12	-.36	.53

$$r = -.07$$

Table 25

Intercorrelation for Reporting Senior 1's on Scale 1
and Reporting Senior 2 on Scale 1

		Average Rating of P by RS 1's on Scale 1	Rating of P by RS 2 on Scale 1
Ratee	1	.73	.20
	2	.70	-1.04
	3	- .82	-1.04
	4	.35	-1.04
	5	.52	1.45
	6	- .17	-1.04
	7	.70	1.45
	8	.01	-1.04
	9	.66	.20
	10	-1.07	.20
	11	-2.02	.20
	12	-1.41	1.45

$$r = -.06$$

Table 26

Intercorrelation for Reporting Senior 1's on Scale 1
and Reporting Senior 2 on Scale 2

		Average Rating of P by RS 1's on Scale 1	Rating of P by RS 2 on Scale 2
Ratee	1	.73	.20
	2	.70	-1.04
	3	- .82	-1.04
	4	.35	-1.04
	5	.52	1.45
	6	- .17	-1.04
	7	.70	1.45
	8	.01	-1.04
	9	.66	.20
	10	-1.07	.20
	11	-2.02	.20
	12	-1.41	1.45

$$r = -.10$$

Table 27

Intercorrelation for Reporting Senior 1's on Scale 1
and Reporting Senior 2 on Scale 3

		Average Rating of P by RS 1's on Scale 1	Rating of P by RS 2 on Scale 3
Ratee	1	.73	.53
	2	.70	.53
	3	- .82	.53
	4	.35	-2.67
	5	.52	.53
	6	- .17	-1.06
	7	.70	.53
	8	.01	-1.06
	9	.66	.53
	10	-1.07	.53
	11	-2.02	.53
	12	-1.41	.53

$$r = .13$$

Table 28

Intercorrelation for Reporting Senior 1's on Scale 2
and Reporting Senior 2 on Scale 1

		Average Rating of P by RS 1's on Scale 2	Rating of P by RS 2 on Scale 1
Ratee	1	.81	.20
	2	.75	-1.04
	3	- .84	-1.04
	4	.38	-1.04
	5	.56	1.45
	6	- .27	-1.04
	7	.75	1.45
	8	.08	-1.04
	9	.69	.20
	10	-1.09	.20
	11	-1.72	.20
	12	-1.86	1.45

$$r = -.06$$

Table 29

Intercorrelation for Reporting Senior 1's on Scale 2
and Reporting Senior 2 on Scale 2

		Average Rating of P by RS 1's on Scale 2	Rating of P by RS 2 on Scale 2
Ratee	1	.81	.20
	2	.75	-1.04
	3	- .84	-1.04
	4	.38	-1.04
	5	.56	1.45
	6	- .27	-1.04
	7	.75	1.45
	8	.08	-1.04
	9	.69	.20
	10	-1.09	.20
	11	-1.72	.20
	12	-1.86	1.45

$$r = -.10$$

Table 30

Intercorrelation for Reporting Senior 1's on Scale 2
and Reporting Senior 2 on Scale 3

		Average Rating of P by RS 1's on Scale 2	Rating of P by RS 2 on Scale 3
Ratee	1	.81	.53
	2	.75	.53
	3	- .84	.53
	4	.38	-2.67
	5	.56	.53
	6	- .27	-1.06
	7	.75	.53
	8	.08	-1.06
	9	.69	.53
	10	-1.09	.53
	11	-1.72	.53
	12	-1.86	.53

$$r = .13$$

Table 31

Intercorrelation for Reporting Senior 1's on Scale 3
and Reporting Senior 2 on Scale 1

		Average Rating of P by RS 1's on Scale 3	Rating of P by RS 2 on Scale 1
Ratee	1	1.18	.20
	2	.78	-1.04
	3	-1.02	-1.04
	4	.30	-1.04
	5	.78	1.45
	6	- .90	-1.04
	7	.38	1.45
	8	- .28	-1.04
	9	.45	.20
	10	-1.02	.20
	11	- .90	.20
	12	- .90	1.45

$$r = -.16$$

Table 32

Intercorrelation for Reporting Senior 1's on Scale 3
and Reporting Senior 2 on Scale 2

		Average Rating of P by RS 1's on Scale 3	Rating of P by RS 2 on Scale 2
Ratee	1	1.18	.20
	2	.78	-1.04
	3	-1.02	-1.04
	4	.30	-1.04
	5	.78	1.45
	6	- .90	-1.04
	7	.38	1.45
	8	- .28	-1.04
	9	- .45	.20
	10	-1.02	.20
	11	- .90	.20
	12	- .90	1.45

$$r = -.16$$

Table 33

Intercorrelation for Reporting Senior 1's on Scale 3
and Reporting Senior 2 on Scale 3

		Average Rating of P by RS 1's on Scale 3	Rating of P by RS 2 on Scale 3
Ratee	1	1.18	.53
	2	.78	.53
	3	-1.02	.53
	4	.30	-2.67
	5	.78	.53
	6	- .90	-1.06
	7	.38	.53
	8	- .28	-1.06
	9	- .45	.53
	10	-1.02	.53
	11	- .90	.53
	12	- .90	.53

$$r = -.01$$

Table 34

Intracorrelation for Reporting Senior 2 on Scales 1 and 2

		Rating of P by RS 2 on Scale 1	Rating of P by RS 2 on Scale 2
Ratee	1	.20	.20
	2	-1.04	-1.04
	3	-1.04	-1.04
	4	-1.04	-1.04
	5	1.45	1.45
	6	-1.04	-1.04
	7	1.45	1.45
	8	-1.04	-1.04
	9	.20	.20
	10	.20	.20
	11	.20	.20
	12	1.45	1.45

$$r = 1.00$$

Table 35

Intracorrelation for Reporting Senior 2 on Scales 1 and 3

		Rating of P by RS 2 on Scale 1	Rating of P by RS 2 on Scale 3
Ratee	1	.20	.53
	2	-1.04	.53
	3	-1.04	.53
	4	-1.04	-2.67
	5	1.45	.53
	6	-1.04	-1.06
	7	1.45	.53
	8	-1.04	-1.06
	9	.20	.53
	10	.20	.53
	11	.20	.53
	12	1.45	.53

$$r = .56$$

Table 36

Intracorrelation for Reporting Senior 2 on Scales 2 and 3

		Rating of P by RS 2 on Scale 2	Rating of P by RS 2 on Scale 3
Ratee	1	.20	.53
	2	-1.04	.53
	3	-1.04	.53
	4	-1.04	-2.67
	5	1.45	.53
	6	-1.04	-1.06
	7	1.45	.53
	8	-1.04	-1.06
	9	.20	.53
	10	.20	.53
	11	.20	.53
	12	1.45	.53

$$r = .56$$

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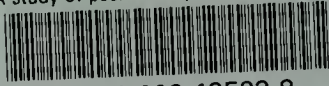
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